We claim:

1. A method for the amplification of nucleic acid, said method comprising:

synthesizing double-stranded DNA from a single-stranded DNA population, and

producing multiple copies of RNA from said double-stranded DNA,

wherein said amplification occurs in a single phase.

2. The method of claim 1, wherein said amplification is proportional.

3. The method of claim 1, wherein said nucleic acid is selected from the group consisting of genomic DNA, cDNA, total RNA, poly(A)$^+$ RNA, and oligonucleotides.

4. The method of claim 3, wherein said poly(A)$^+$ RNA is mRNA.

5. The method of claim 1, further comprising:

contacting said multiple copies of RNA with a solid support comprising nucleic acid probes.

6. The method of claim 5, further comprising:

detecting the presence or absence of hybridization of said multiple copies of RNA to said nucleic acid probes on said solid support.

7. The method of claim 5, wherein said solid support comprising nucleic acid probes is selected from the group consisting of a nucleic acid probe array, a membrane blot, a microwell, a bead, and a sample tube.

8. The method of claim 1, wherein said nucleic acid is isolated from an eukaryotic cell or tissue.

9. The method of claim 8, wherein said eukaryotic cell or tissue is mammalian.

10. The method of claim 9, wherein said mammalian cell or tissue is human.

11. The method of claim 1, wherein said nucleic acid is isolated from a source selected from the group consisting of dissected tissue, microdissected tissue, a tissue subregion, a tissue biopsy sample, a cell sorted population, a cell culture, and a single cell.

12. The method of claim 1, wherein said nucleic acid is isolated from a cell or tissue source selected from the group consisting of brain, liver, heart, kidney, lung, spleen, retina, bone, lymph node, endocrine gland, reproductive organ, blood, nerve, vascular tissue, and olfactory epithelium.

13. The method of claim 1, wherein said nucleic acid is isolated from a cell or tissue source selected from the group consisting of embryonic and tumorigenic.

14. An amplified nucleic acid preparation comprising RNA obtained by the method of claim 1.

15. An amplified nucleic acid preparation comprising RNA obtained by the method of claim 2.

16. A gene expression monitoring system comprising a solid support, which comprises nucleic acid probes and the amplified nucleic acid preparation of claim 14.

17. A gene expression monitoring system comprising a solid support, which comprises nucleic acid probes and the amplified nucleic acid preparation of claim 15.

18. A nucleic acid detection system comprising the amplified nucleic acid preparation of claim 14 immobilized to a solid support.

19. A nucleic acid detection system comprising the amplified nucleic acid preparation of claim 15 immobilized to a solid support.

20. The method of claim 1, wherein said synthesizing and producing comprise the use of an automated machine.

21. The method of claim 20, wherein said automated machine is selected from the group consisting of a PCR thermocycler, an integrated reaction device, and a robotic delivery sytem.

22. A kit for the amplification of nucleic acids, wherein said kit comprises a means for the single-phase amplification according to claim 1.

23. The kit of claim 22, wherein said means is a reaction vessel containing one or more reagents in concentrated form.

24. The kit of claim 23, wherein said reagent is an enzyme.